

**Form PTO-1449** (modified)

List of Patents and Publications for Applicant's

**INFORMATION DISCLOSURE STATEMENT**

(Use several sheets if necessary)

Atty. Docket No.  
ZILG518CONSerial No.  
UNKNOWNApplicant  
BRETT LOWE ET AL.Filing Date:  
HEREWITHGroup:  
UNKNOWNU.S. Patent Documents  
See Page 1Foreign Patent Documents  
N/AOther Art  
See Pages 2-5**U.S. Patent Documents**

| Exam. Init. | Ref. Des. | Document Number | Date     | Name           | Class | Sub Class | Filing Date if App. |
|-------------|-----------|-----------------|----------|----------------|-------|-----------|---------------------|
| AM          | A1        | 6,156,653       | 12/5/00  | Smythe et al.  |       |           | 11/3/97             |
|             | A2        | 6,190,973 B1    | 2/20/01  | Berg et al.    |       |           | 12/18/98            |
|             | A3        | 6,165,846       | 12/26/00 | Carns et al.   |       |           | 3/2/99              |
|             | A4        | 5,089,432       | 2/18/92  | Yoo            |       |           | 8/17/90             |
|             | A5        | 5,946,599       | 8/31/99  | Lee et al.     |       |           | 7/24/97             |
|             | A6        | 5,710,454       | 1/20/98  | Wu             |       |           | 4/29/96             |
|             | A7        | 5,422,311       | 6/6/95   | Woo            |       |           | 5/2/94              |
|             | A8        | 5,541,131       | 7/30/96  | Yoo et al.     |       |           | 2/1/91              |
|             | A9        | 5,986,312       | 11/16/99 | Kuroda         |       |           | 9/3/97              |
|             | A10       | 5,130,266       | 7/14/92  | Huang et al.   |       |           | 8/28/90             |
|             | A11       | 6,040,238       | 3/21/00  | Yang et al.    |       |           | 1/8/98              |
|             | A12       | 5,599,746       | 2/4/97   | Lur et al.     |       |           | 5/6/94              |
|             | A13       | 5,434,096       | 7/18/95  | Chu et al.     |       |           | 10/5/94             |
|             | A14       | 6,098,304       | 8/8/00   | Manjkow et al. |       |           | 7/26/96             |
|             | A15       | 5,554,566       | 9/10/96  | Lur et al.     |       |           | 9/6/94              |
|             | A16       | 5,214,305       | 5/25/93  | Huang et al.   |       |           | 1/27/92             |
|             | A17       | 5,869,378       | 2/9/99   | Michael        |       |           | 4/26/96             |
| AM          | A18       | 6,146,970       | 11/14/00 | Witek et al.   |       |           | 5/26/98             |

**Foreign Patent Documents**

| Exam. Init. | Ref. Des. | Document Number | Date | Country | Class | Sub Class | Translation Yes/No |
|-------------|-----------|-----------------|------|---------|-------|-----------|--------------------|
|             | B1        |                 |      |         |       |           |                    |

Examiner:

Quor Hoang

Date Considered:

1/2004

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| List of Patents and Publications for Applicant's<br><br><b>INFORMATION DISCLOSURE STATEMENT</b><br><br>(Use several sheets if necessary) |                                 | Applicant<br>BRETT LOWE ET AL. |                       |
|  |                                 | Filing Date:<br>HEREWITH       | Group:<br>UNKNOWN     |
| U.S. Patent Documents<br>See Page 1  | Foreign Patent Documents<br>N/A | Other Art<br>See Pages 2-5     |                       |

### Other Art (Including Author, Title, Date, Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation   |
|-------------|-----------|--|
| my          | C1        | Krishna Seshan et al., "The Quality and Reliability of Intel's Quarter Micron Process," Intel Technology Journal Q3'98, pp. 1-11.  |
|             | C2        | Y. G. Shen et al., "Oxygen-induced amorphous structure of tungsten thin films," Applied Physics Letters, Volume 75, number 15, October 11, 1999, pp. 2211-2213.  |
|             | C3        | Alain P. Blossie, "Improved Thermal Stability of CVD WSi <sub>x</sub> During Furnace Oxidation By A Rapid Thermal Anneal Pretreatment," Mat. Res. Soc. Symp. Proc. Vol. 525, 1998 Materials Research Society, pp. 371-377. |
|             | C4        | M. Doscher et al., "A study of WSi <sub>2</sub> Thin Films, Formed By The Reaction Of Tungsten With Solid Or Liquid Silicon, By Rapid Thermal Annealing," Thin Solid Films, 1994, pp. 251-258.                             |
|             | C5        | C.J. Backhouse et al., "WSi <sub>x</sub> Thin Films For Resistors," Thin Solid Films, 1997, pp. 299-303.   |
|             | C6        | A Fabricius et al., "Rapid Thermal Annealing Of Tungsten Silicide Films," Mat. Res. Soc. Symp. Proc. Vol. 402, 1996, Materials Research Society, pp. 625-630.  |
|             | C7        | J. P. Gambino et al., "Thermal Stability of WSi <sub>2</sub> Polycide Structures For 1Gbit DRAMs," IEEE, 1998, pp. 259-261.  |
|             | C8        | J.P. Gambino et al., "Reaction of Ti with WSi <sub>2</sub> ," American Institute of Physics, J. Appl. Phys. 82(12) December 15, 1997, pp. 6073-6077.   |
|             | C9        | V. G. Glebovsky et al., "Properties of Tungsten Silicide Thin Films Obtained By Magnetron Sputtering Of Composite Cast Targets," Materials Research Society Symposium Proceedings, Vol. 402, November 27-30, 1995, 4 pgs.  |
|             | C10       | Tohru Hara et al., "Properties of Sputtered Tungsten Silicide Films Deposited With Different Argon Pressures," Nuclear Instruments and Methods In Physics Research, B39, 1989, pp. 302-305.                                |
|             | C11       | H. Hayashida et al., "Dopant Redistribution In Dual Gate W-Polycide CMOS And Its Improvement By RTA," Semiconductor Device Engineering Laboratory, Integrated Circuit Division, Toshiba Corporation, 1989, 2 pgs.          |
|             | C12       | Hoi Chung et al., "Effects Of The Phosphorus Doping Level And Excess Silicon On The Oxidation Of Tungsten Polycide," Journal of the Korean Physical Society, Vol. 29, No. 5, October 1996, pp. 658-663.                    |
| my          | C13       | Masahiro Itoh et al., "Observation Of Microstructure At The Polycrystalline Silicon And Tungsten Silicide Interface," Applied Surface Science, 56-58, 1992, pp. 540-544.   |

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| Examiner: <i>David M. Huh</i>   | Date Considered: <i>6/2004</i> |
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|-------------|-----------|--|
| my          | C14       | Seiichi Iwata et al., "Evaluation Of Adherence Of CVD Tungsten Silicide Film To Polycrystalline Silicon," Materials Transactions, JIM, Vol. 30, No. 6, 1989, pp. 403-410.  |
|             | C15       | Takamaro Kikkawa et al., "0.35 $\mu$ m Technologies In Japan," ULSI Device Development Laboratories, Materials Research Society, Mat. Res. Soc. Symp. Proc. Vol. 402, 1996, pgs. 199-208.  |
|             | C16       | E.M. King et al., "Tungsten Rich Silicide/Polysilicon (polycide) For MOS Gates And Interconnections," J. Vac. Sci. Technol. A1(2), April-June 1983, pp. 614-615.   |
|             | C17       | Muh Ling Ger et al., "Sputtered WSi <sub>x</sub> for Micromechanical Structures," Materials Research Society, J. Mater. Res. Vol. 10, No. 7, July 1995, pp. 1710-1720.   |
|             | C18       | Yoji Mashiko et al., "Formation Mechanisms Of The Deformed Oxide Layer In A Tungsten Polycide Structure," Jpn. J. Appl. Phys. Vol. 35, Part 1, No. 2A, February 1996, pp. 584-588.   |
|             | C19       | F. Mohammadi et al., "Properties Of Sputtered Tungsten Silicide For MOS Integrated Circuit Applications," J. Electrochem. Soc. Solid-State Science and Technology, February 1980, pp. 450-454.   |
|             | C20       | F. Mohammadi et al., "Kinetics Of The Thermal Oxidation of WSi <sub>2</sub> ," American Institute of Physics, Appl. Phys. Lett. 35(7), October 1979, pp. 529-531.  |
|             | C21       | W. Pletschen et al., "Properties Of Sequentially Sputtered Tungsten Silicide Thin Films," Applied Surface Science 38, 1989, pp. 259-268.   |
|             | C22       | Krishna Shenai et al., "Structural And Electrical Properties Of Furnace And Rapid Thermally Annealed LPCVD WSi <sub>2</sub> Films On Single-Crystal, Polycrystalline, And Amorphous Silicon Substrates," IEEE Transactions On Electron Devices, Vol. 39, No. 1, January 1992, pp. 193-199. |
|             | C23       | M.P. Siegal et al., "The Formation Of Thin-Film Tungsten Silicide Annealed In Ultrahigh Vacuum," America Institute of Physics, J. Appl. Phys. 66(12), December 1989, pp. 6073-6076.  |
|             | C24       | A.K. Sinha, "Refractory Metal Silicides For VLSI Applications," American Vacuum Society, J. Vac. Sci. Technol., 19(3), September-October 1981, pp. 778-785.  |
|             | C25       | John Smythe et al., "A Structural And Bonding Perspective Of The Anomalous Oxidation Of Tungsten Polycide," MSE510 Term Project Paper, December 9, 2000, 17 pgs.   |
| my          | C26       | H. Tsutsui et al., "Suppression Of Partial Corrosion Of Sputtered Ws <sub>ix</sub> Gate In HF Solution," Electrochemical Society Proceedings, Vol. 96-2, 1996, pp. 226-232.  |

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| Exam. Init. | Ref. Des. | Citation   |
|-------------|-----------|--|
| ky          | C27       | Chue-san Yoo et al., "Si/W Ratio Changes And Film Peeling During Polycide Annealing," Vol. 29, No. 11, November, 1990, pp. 2535-2540.  |
|             | C28       | Chapter 11: "Refractory Metals and Their Silicides in VLSI Fabrication," Silicon Processing for the VLSI Era, 1986, pp. 384-406.   |
|             | C29       | George E. Georgiou, Chapter 2: "Silicides and Contacts for ULSI," Multilevel Metallization for Integrated Circuits, pp. 32-91.   |
|             | C30       | S. M. Sze, "p-n Junction Diode," Physics of Semiconductor Devices, Second Edition, Ch. 2, 1981, pp. 63-132.  |
|             | C31       | J.C. Dupuy et al., "Dopant Redistribution During The Formation Of Tungsten Disilicide By Rapid Thermal Processing," Materials Science and Engineering, B22 (1994), pp. 168-171.  |
|             | C32       | S. L. Zhang et al., "The Influence of Substrate Doping On Silicide Formation With Tungsten Deposited From Tungsten Hexafluoride," Mat. Res. Soc. Symp. Proc. Vol. 260, Materials Research Society, 1992, pp. 411-416.  |
|             | C33       | C. B. Cooper III et al., "Dopant Redistribution in Silicides: Materials and Process Issues," J. Vac. Sci. Technol. B2 (4), Oct.-Dec. 1984, 1984 American Vacuum Society, pp. 718-722.  |
|             | C34       | Tae-Hyung Kim et al., "LPCVD WSi <sub>x</sub> /poly-Si W-polycide, The Properties of W-Polycide On Thickness Changes of the WSi <sub>x</sub> /poly-Si Films Deposited By LPCVD," Trans. KIEE, Vol. 41, No. 10, Oct. 1992, pp. 1172-1179.                       |
|             | C35       | S. Nygren et al., "Dopant Redistribution From Ion Implanted WSi <sub>2</sub> On Poly-Si," Elsevier Science Publishers B.V. (North-Holland), 1988, pp. 419-422.   |
|             | C36       | F. C. Shone et al., "Modeling Dopant Redistribution in SiO <sub>2</sub> /WSi <sub>2</sub> /Si Structure," 536-IEDM 86, December 1986, 4 pgs.   |
|             | C37       | J. Torres et al., "Phosphorus Redistribution in a WSi <sub>2</sub> /Poly-Si Gate Structure During Furnace Annealing," March 1987, 4 pgs.   |
|             | C38       | Chongmu Lee et al., "Effects of the Annealing Treatment on the Oxidation Behaviors of Tungsten Silicide," Korean Applied Physics (Korean Physical Society) Vol. 3, No. 2, May 1990, pp. 235-240.   |
| ky          | C39       | Hoi Hwan Chung et al., "poly-Si/SiO <sub>2</sub> /Si - Study on Formation of W-Silicide in the Doped-Phosphorus poly-Si/SiO <sub>2</sub> /Si-Substrate," Dept. of Electronic Eng., Kyunghee Univ., Div. of Elec. & Infor. Technology, KIST, 1996, pp. 126-134. |

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| Exam.<br>Init. | Ref.<br>Des. | Citation   |
|----------------|--------------|--|
| hy             | C40          | Co-pending United States Patent Application Serial No. 09/918,364 filed July 30, 2001 (ZILG:518/ZILO:002) which is relied upon by the present application for an earlier effective filing date under 35 U.S.C. Section 120 |

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